TYPHIOD FEVER

Clinical Features: Insidious onset of sustained fever, marked headache, malaise, anorexia, relative bradycardia, splenomegaly, constipation or diarrhea, rose spots on the trunk and nonproductive cough. Severity of symptoms can range from mild illness to invasive disease and complications, including death. Many mild and atypical infections occur, especially in endemic areas. Carriage of *S.* Typhi may be prolonged.

Causative Agent: *S.* Typhi bacterium (*S. enterica* subsp. e*nterica* serovar Typhi, formerly known as *S. typhi*).

Mode of Transmission: Humans are the only reservoir; therefore, ingestion of food (shellfish, fruit, vegetables) and water contaminated by feces and urine of *S.*Typhi cases and asymptomatic carriers are the main sources of infection. Flies also promote spread of disease.

Incubation Period: From 3 days to over 60 days, usual range 8-14 days.

Period of Communicability: Dependent upon the presence of organisms in excreta, communicability is usually from the first week throughout convalescence. Among 10% of untreated patients, this can be up to 3 months. Between 2% and 5% become permanent carriers.

Public Health Significance: Despite the availability of a vaccine and treatment, about 12.5 million persons in developing countries experience typhoid fever annually. A case-fatality rate of 15-20% is also observed among cases who do not receive prompt treatment. Typhoid fever infection can be prevented through access to safe water, proper sanitation, avoiding consumption of risky foods and liquids, and becoming immunized.

Reportable Disease in Kansas Since: 1982

Clinical Criteria

- Insidious onset of sustained fever, headache, malaise, anorexia, relative bradycardia, constipation or diarrhea, and nonproductive cough.

Laboratory Criteria for Surveillance Purposes

- Isolation of *S. typhi* from blood, stool, or other clinical specimen.

Surveillance Case Definitions

- *Confirmed:* A clinically compatible case that is laboratory confirmed

- *Probable:* A clinically compatible case that is epidemiologically linked to a confirmed case in an outbreak

  NOTE: Isolation of the organism is required for confirmation. Serologic evidence alone is not sufficient for diagnosis. Asymptomatic carriage should not be reported as typhoid fever.

Epidemiology and Trends

2005 Kansas Count: 1

	Rate per 100,000	*95% CI*
Kansas Rate	<0.1	(0.0 – 0.1)
U.S. Rate (2004)	0.1	*NA*

Approximately 400 cases of typhoid fever are reported in the United States annually[1]. Of these cases, more than two-thirds are acquired while traveling internationally to endemic areas of Asia, Africa, the Indian subcontinent, and Latin America. Two typhoid vaccines are currently licensed for use in the U.S. Protection is limited, with demonstrated efficacy of these vaccines ranging from 50% to 80%[2].

The one confirmed case of typhoid fever reported in Kansas during 2005 traveled to Ecuador prior to disease onset.

Since 1994, zero to two cases have been reported annually, for a total of 10 cases.

[1] Centers for Disease Control and Prevention. Typhoid Fever. http://www.cdc.gov/ncidod/dbmd/diseaseinfo/typhoidfever_g.htm

[2] American Academy of Pediatrics. Salmonella Infections. In: Pickering LK, Ed. *Red Book: 2003 Report of the Committee on Infectious Diseases.* 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003: 541.